

1. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 4} \frac{\sqrt{6x - 8} - 4}{2x - 8}$$

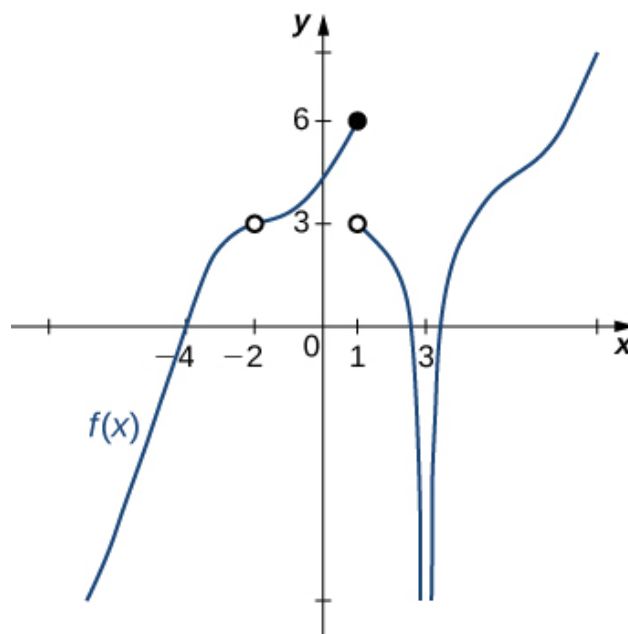
- A. ∞
 - B. 1.225
 - C. 0.375
 - D. 0.125
 - E. None of the above
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2. Based on the information below, which of the following statements is always true?

As x approaches 6, $f(x)$ approaches 18.908.

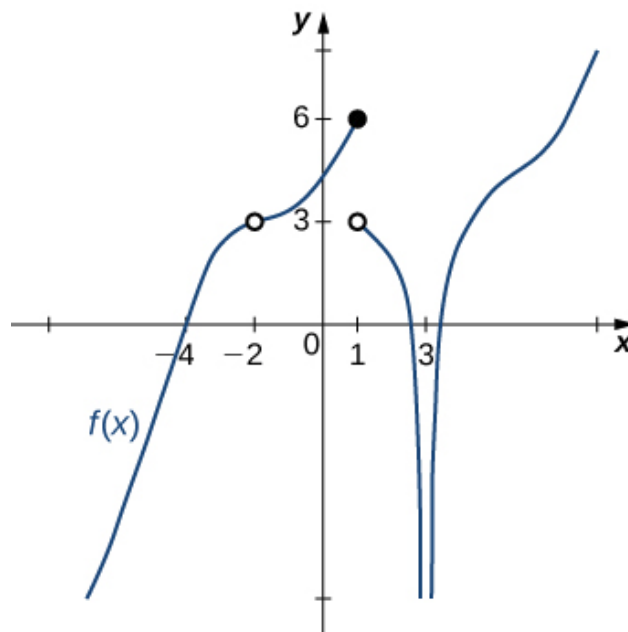
- A. $f(x)$ is close to or exactly 18.908 when x is close to 6
 - B. $f(x) = 6$ when x is close to 18.908
 - C. $f(x) = 18.908$ when x is close to 6
 - D. $f(x)$ is close to or exactly 6 when x is close to 18.908
 - E. None of the above are always true.
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3. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x) = -\infty$.



- A. -2
- B. $-\infty$
- C. 3
- D. Multiple a make the statement true.
- E. No a make the statement true.

4. For the graph below, evaluate the limit: $\lim_{x \rightarrow 1} f(x)$.



- A. $-\infty$
- B. 3
- C. 6
- D. The limit does not exist
- E. None of the above

5. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -2^+} \frac{-3}{(x-2)^3} + 4$$

- A. $f(-2)$
- B. $-\infty$
- C. ∞
- D. The limit does not exist
- E. None of the above

6. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow 8^+} \frac{2}{(x+8)^6} + 9$$

- A. $-\infty$
 - B. $f(8)$
 - C. ∞
 - D. The limit does not exist
 - E. None of the above
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7. To estimate the one-sided limit of the function below as x approaches 5 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{5}{x} - 1}{x - 5}$$

- A. $\{5.0000, 4.9000, 4.9900, 4.9990\}$
 - B. $\{4.9000, 4.9900, 5.0100, 5.1000\}$
 - C. $\{5.1000, 5.0100, 5.0010, 5.0001\}$
 - D. $\{4.9000, 4.9900, 4.9990, 4.9999\}$
 - E. $\{5.0000, 5.1000, 5.0100, 5.0010\}$
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8. Based on the information below, which of the following statements is always true?

As x approaches 9, $f(x)$ approaches 2.293.

- A. $f(x) = 9$ when x is close to 2.293
- B. $f(x) = 2.293$ when x is close to 9
- C. $f(x)$ is close to or exactly 2.293 when x is close to 9
- D. $f(x)$ is close to or exactly 9 when x is close to 2.293
- E. None of the above are always true.

9. To estimate the one-sided limit of the function below as x approaches 10 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{10}{x} - 1}{x - 10}$$

- A. $\{10.0000, 9.9000, 9.9900, 9.9990\}$
 - B. $\{9.9000, 9.9900, 9.9990, 9.9999\}$
 - C. $\{9.9000, 9.9900, 10.0100, 10.1000\}$
 - D. $\{10.1000, 10.0100, 10.0010, 10.0001\}$
 - E. $\{10.0000, 10.1000, 10.0100, 10.0010\}$
-

10. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 7} \frac{\sqrt{6x - 6} - 6}{3x - 21}$$

- A. 0.028
 - B. 0.816
 - C. ∞
 - D. 0.083
 - E. None of the above
-

11. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 8} \frac{\sqrt{7x - 7} - 7}{4x - 32}$$

- A. 0.071
- B. ∞
- C. 0.661

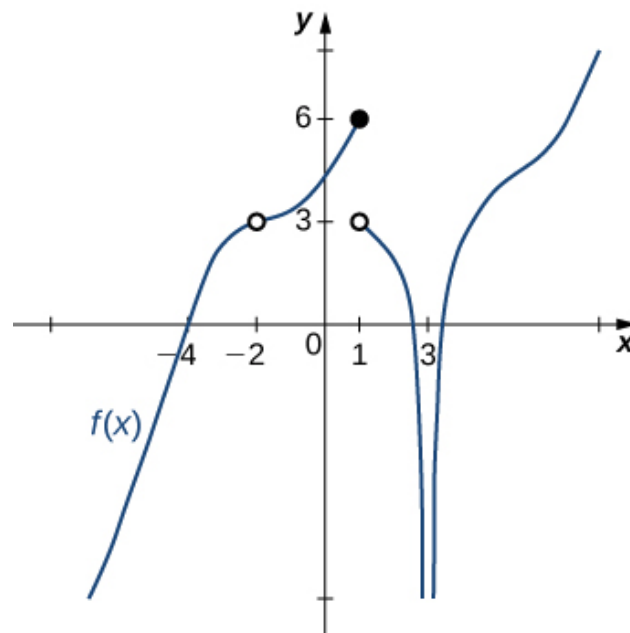
- D. 0.018
- E. None of the above

12. Based on the information below, which of the following statements is always true?

As x approaches 7, $f(x)$ approaches ∞ .

- A. $f(x)$ is close to or exactly ∞ when x is large enough.
- B. x is undefined when $f(x)$ is close to or exactly ∞ .
- C. $f(x)$ is undefined when x is close to or exactly 7.
- D. $f(x)$ is close to or exactly 7 when x is large enough.
- E. None of the above are always true.

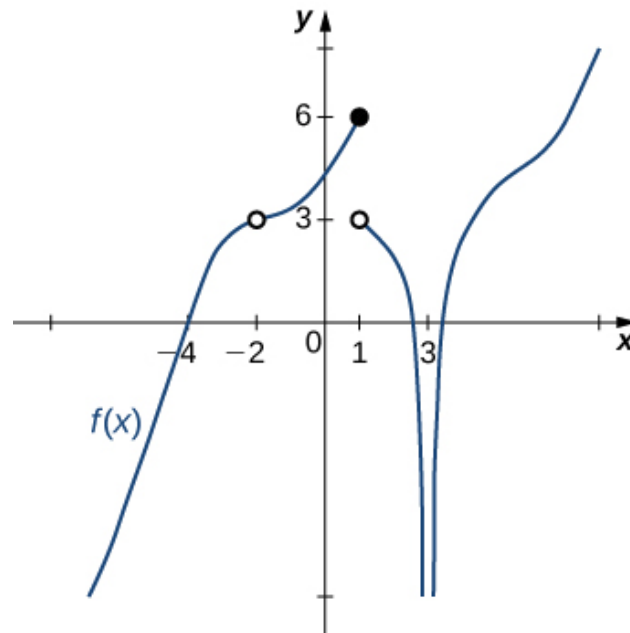
13. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x) = -\infty$.



- A. $-\infty$
- B. -2

- C. 3
 - D. Multiple a make the statement true.
 - E. No a make the statement true.
-

14. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x) = -\infty$.



- A. -2
 - B. $-\infty$
 - C. 3
 - D. Multiple a make the statement true.
 - E. No a make the statement true.
-

15. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow 8^-} \frac{-5}{(x+8)^8} + 2$$

- A. ∞

- B. $f(8)$
 - C. $-\infty$
 - D. The limit does not exist
 - E. None of the above
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16. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow 6^+} \frac{1}{(x+6)^4} + 7$$

- A. $f(6)$
 - B. $-\infty$
 - C. ∞
 - D. The limit does not exist
 - E. None of the above
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17. To estimate the one-sided limit of the function below as x approaches 1 from the left, which of the following sets of numbers should you use?

$$\frac{\frac{1}{x} - 1}{x - 1}$$

- A. $\{1.0000, 1.1000, 1.0100, 1.0010\}$
 - B. $\{0.9000, 0.9900, 1.0100, 1.1000\}$
 - C. $\{0.9000, 0.9900, 0.9990, 0.9999\}$
 - D. $\{1.0000, 0.9000, 0.9900, 0.9990\}$
 - E. $\{1.1000, 1.0100, 1.0010, 1.0001\}$
-

18. Based on the information below, which of the following statements is always true?

$f(x)$ approaches 17.817 as x approaches 6.

- A. $f(6)$ is close to or exactly 17
 - B. $f(17) = 6$
 - C. $f(6) = 17$
 - D. $f(17)$ is close to or exactly 6
 - E. None of the above are always true.
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19. To estimate the one-sided limit of the function below as x approaches 5 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{5}{x} - 1}{x - 5}$$

- A. $\{5.0000, 5.1000, 5.0100, 5.0010\}$
 - B. $\{5.0000, 4.9000, 4.9900, 4.9990\}$
 - C. $\{4.9000, 4.9900, 5.0100, 5.1000\}$
 - D. $\{5.1000, 5.0100, 5.0010, 5.0001\}$
 - E. $\{4.9000, 4.9900, 4.9990, 4.9999\}$
-

20. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 3} \frac{\sqrt{7x - 5} - 4}{6x - 18}$$

- A. 0.021
 - B. 0.441
 - C. 0.125
 - D. ∞
 - E. None of the above
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21. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 6} \frac{\sqrt{5x - 14} - 4}{6x - 36}$$

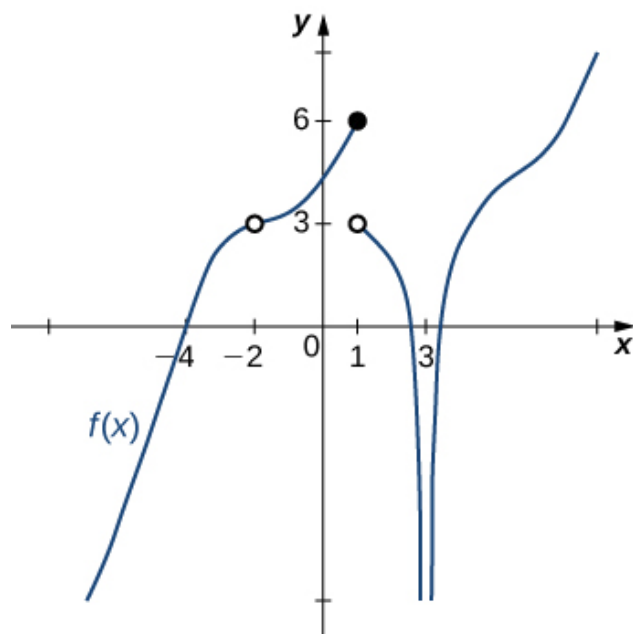
- A. 0.373
 - B. 0.125
 - C. ∞
 - D. 0.021
 - E. None of the above
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22. Based on the information below, which of the following statements is always true?

As x approaches 5, $f(x)$ approaches ∞ .

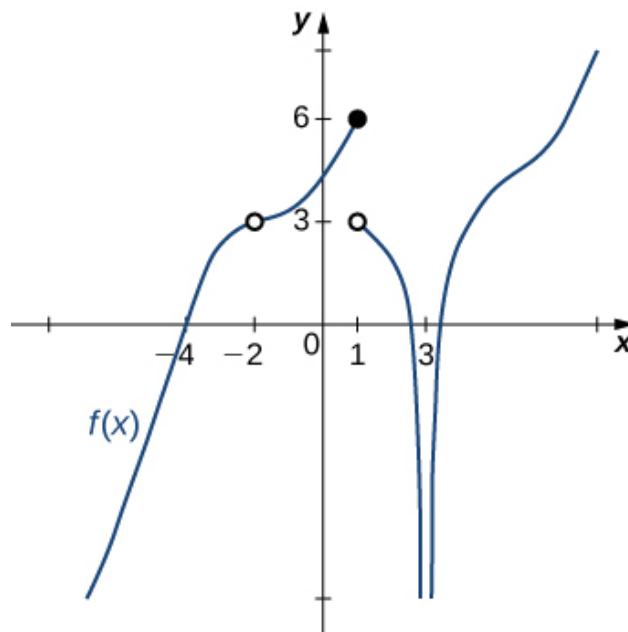
- A. $f(x)$ is undefined when x is close to or exactly 5.
 - B. $f(x)$ is close to or exactly ∞ when x is large enough.
 - C. $f(x)$ is close to or exactly 5 when x is large enough.
 - D. x is undefined when $f(x)$ is close to or exactly ∞ .
 - E. None of the above are always true.
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23. For the graph below, find the value(s) a that makes the statement true:
 $\lim_{x \rightarrow a} f(x)$ does not exist.



- A. 3
- B. -2
- C. 1
- D. Multiple a make the statement true.
- E. No a make the statement true.

24. For the graph below, evaluate the limit: $\lim_{x \rightarrow 3} f(x)$.



- A. -2
- B. 1
- C. $-\infty$
- D. The limit does not exist
- E. None of the above

25. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -3^-} \frac{4}{(x+3)^7} + 3$$

- A. $f(-3)$
- B. ∞
- C. $-\infty$
- D. The limit does not exist
- E. None of the above

26. Evaluate the one-sided limit of the function $f(x)$ below, if possible.

$$\lim_{x \rightarrow -3^+} \frac{4}{(x-3)^5} + 1$$

- A. $-\infty$
 - B. ∞
 - C. $f(-3)$
 - D. The limit does not exist
 - E. None of the above
-

27. To estimate the one-sided limit of the function below as x approaches 4 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{4}{x} - 1}{x - 4}$$

- A. $\{3.9000, 3.9900, 4.0100, 4.1000\}$
 - B. $\{4.0000, 3.9000, 3.9900, 3.9990\}$
 - C. $\{4.0000, 4.1000, 4.0100, 4.0010\}$
 - D. $\{3.9000, 3.9900, 3.9990, 3.9999\}$
 - E. $\{4.1000, 4.0100, 4.0010, 4.0001\}$
-

28. Based on the information below, which of the following statements is always true?

As x approaches ∞ , $f(x)$ approaches 6.955.

- A. x is undefined when $f(x)$ is large enough.
- B. $f(x)$ is close to or exactly 6.955 when x is large enough.
- C. $f(x)$ is close to or exactly ∞ when x is large enough.
- D. $f(x)$ is undefined when x is large enough.
- E. None of the above are always true.

29. To estimate the one-sided limit of the function below as x approaches 2 from the right, which of the following sets of numbers should you use?

$$\frac{\frac{2}{x} - 1}{x - 2}$$

- A. {2.1000, 2.0100, 2.0010, 2.0001}
 - B. {1.9000, 1.9900, 2.0100, 2.1000}
 - C. {1.9000, 1.9900, 1.9990, 1.9999}
 - D. {2.0000, 1.9000, 1.9900, 1.9990}
 - E. {2.0000, 2.1000, 2.0100, 2.0010}
-

30. Evaluate the limit below, if possible.

$$\lim_{x \rightarrow 7} \frac{\sqrt{7x - 33} - 4}{6x - 42}$$

- A. 0.021
 - B. 0.125
 - C. ∞
 - D. 0.441
 - E. None of the above
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